

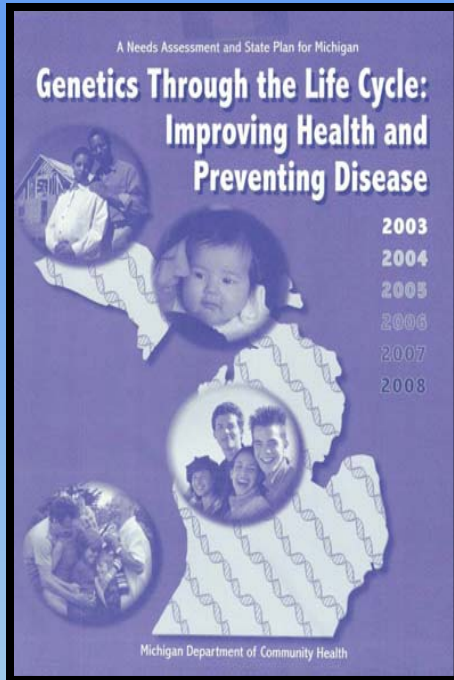


# *Cancer Genomics for Public Health*

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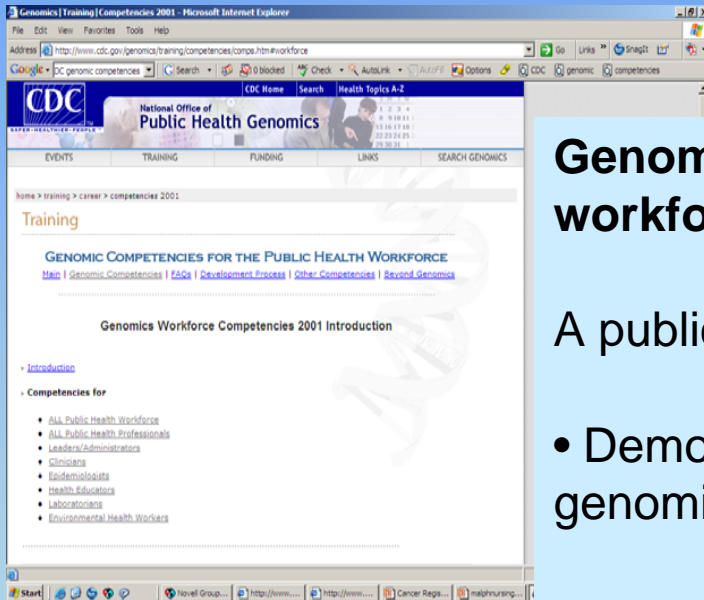


# A Vision for the Role of Genetics in Public Health

## Michigan Genetics Plan 2003-2008

**Improved health outcomes and an enhanced quality of life for the people of Michigan through appropriate use of genetic information, technology, and services.**

# CDC Genomics Competencies for the Public Health Workforce



**Genomic competencies for the public health workforce at any level in any program**

A public health worker is able to:

- Demonstrate basic knowledge of the role that genomics plays in the development of disease
- Identify the limits of his/her genomic expertise
- Make appropriate referrals to those with more genomic expertise

[www.cdc.gov/genomics/training/competencies/](http://www.cdc.gov/genomics/training/competencies/)

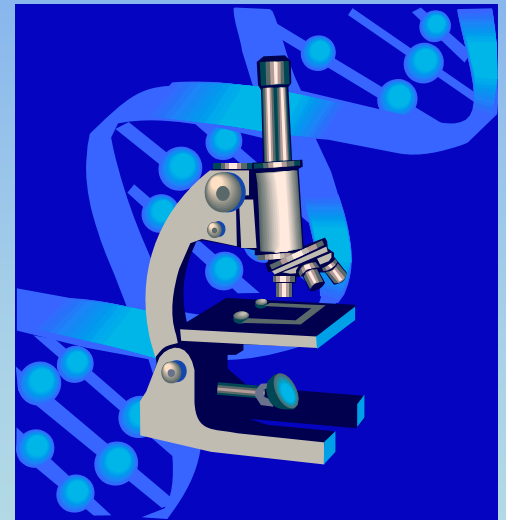
# Overview of Michigan 's Training Strategies

Strategy	Examples
1. Building a Foundation – know your audience	Genomics Workgroup at Michigan Department of Community Health (MDCH)
2. Raising awareness and stimulating interest	<i>An introduction to Genomics for Public Health Professionals</i> developed by CDC and Centers for Genomics and Public Health in MI, NC, and WA
3. Increasing knowledge	<i>Six Weeks to Genomics Awareness</i>
4. Strengthening skills	Graduate Summer Sessions in Epidemiology (UMSPH with scholarships sponsored by the Center)
5. Using evaluation to improve thinking	Evaluation by organizers, trainers and participants

**In the Beginning...**

# 2003 DNA Day at MDCH

- Celebrate 50<sup>th</sup> anniversary of the discovery of the double helix
- Promote Awareness of genetics in public health
- *An Introduction to Genomics for Public Health Practitioners*



[www.cdc.gov/genomics/training/GPHP/default.htm](http://www.cdc.gov/genomics/training/GPHP/default.htm)

# *Six Weeks to Genomics Awareness*



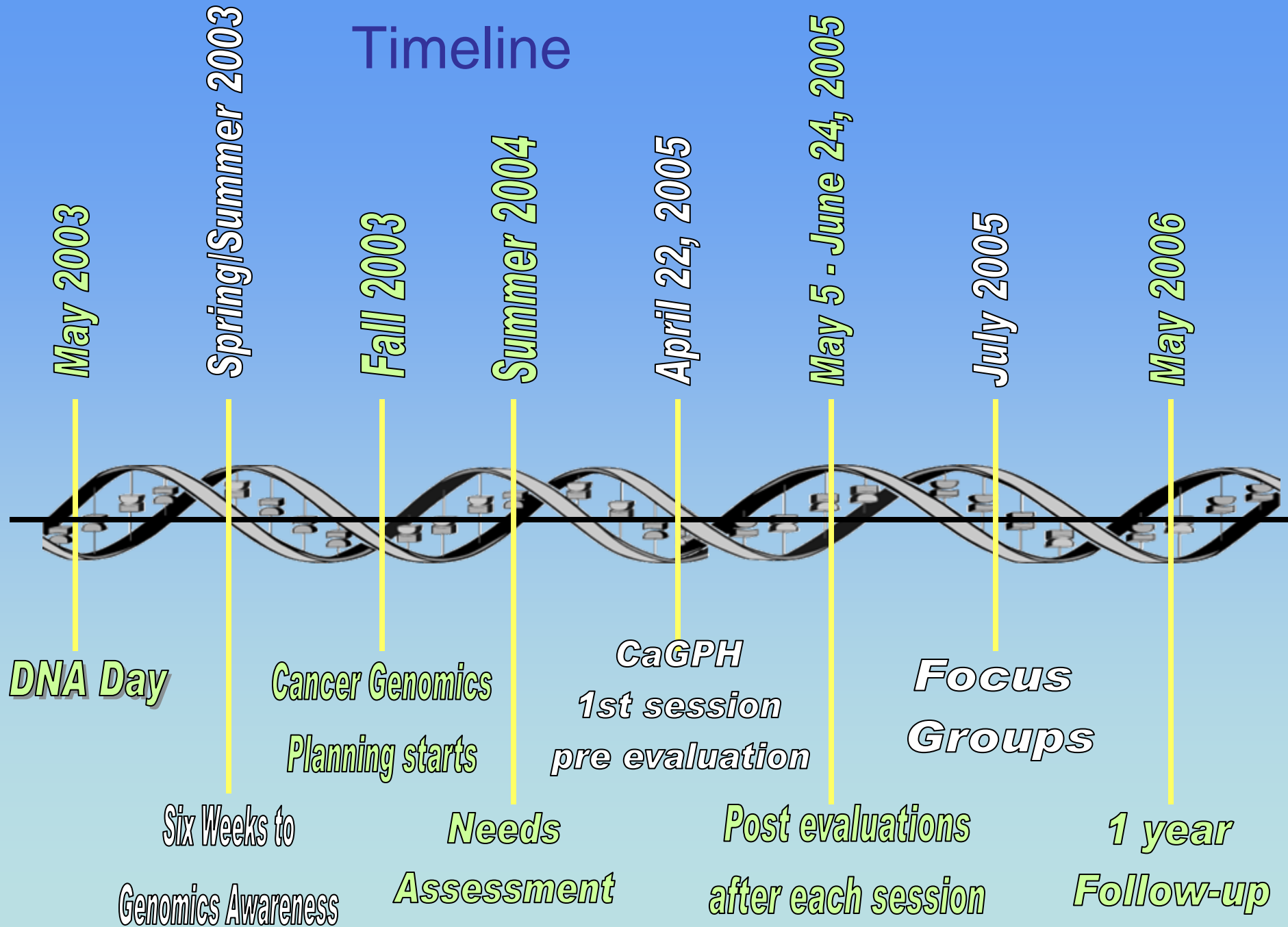
- Collaboration between the University of Michigan Center for Genomics and Public Health (MCGPH) and MDCH
- Designed to provide public health professionals a foundation for understanding how genomics advances are relevant to public health
- Held at MDCH with voluntary participation for interested staff in spring/summer 2003
- MCGPH converted to a web based version and disseminated at:

[www.cdc.gov/genomics/training/sixwks.htm](http://www.cdc.gov/genomics/training/sixwks.htm)

# Cancer Genomics For Public Health (CaGPH) Planning Committee

- Started in 2003
- MDCH Cancer Section Manager, cancer staff, genomics staff, MCGPH staff
- Developed needs assessment with assistance from MCGPH, and Centers for Genomics and Public Health at the University of Washington, University of North Carolina
- Guided development of content and evaluation process

# Timeline




# MDCH Cancer Prevention and Control Section

- Identified the need for further genomics education with a cancer focus
- Needs assessment performed in June 2004 to guide course content
  - Completed by 27 individuals in the Cancer Section
  - Majority employed by MDCH cancer section for 3 to 5 years
  - 48% reported having some kind of formal coursework or workshop that focused on genetics

# Overview of Needs Assessment

June 2004

Knowledge  
Confidence  
Relevance  
Interest



- ✓ Cancer biology and genetics
- ✓ Genomic approaches to cancer prevention and control
- ✓ ELSI issues related to cancer genetics
- ✓ Ways to integrate cancer genetics into professional practice

# Overview of Needs Assessment June 2004

## Cancer Biology and Genetics

- Pathogenesis
- Tumor Growth
- Oncogenes
- Tumor Suppressor Genes
- DNA Repair Genes
- Histologic Grading
- Metastasis

## Genomics Revolution in Cancer Control

- Prevention Strategies
- Risk Assessment
- Diagnosis and Treatment
- Informed Decision Making
- Targeted Therapies

## ELSI relating to Cancer Genetics

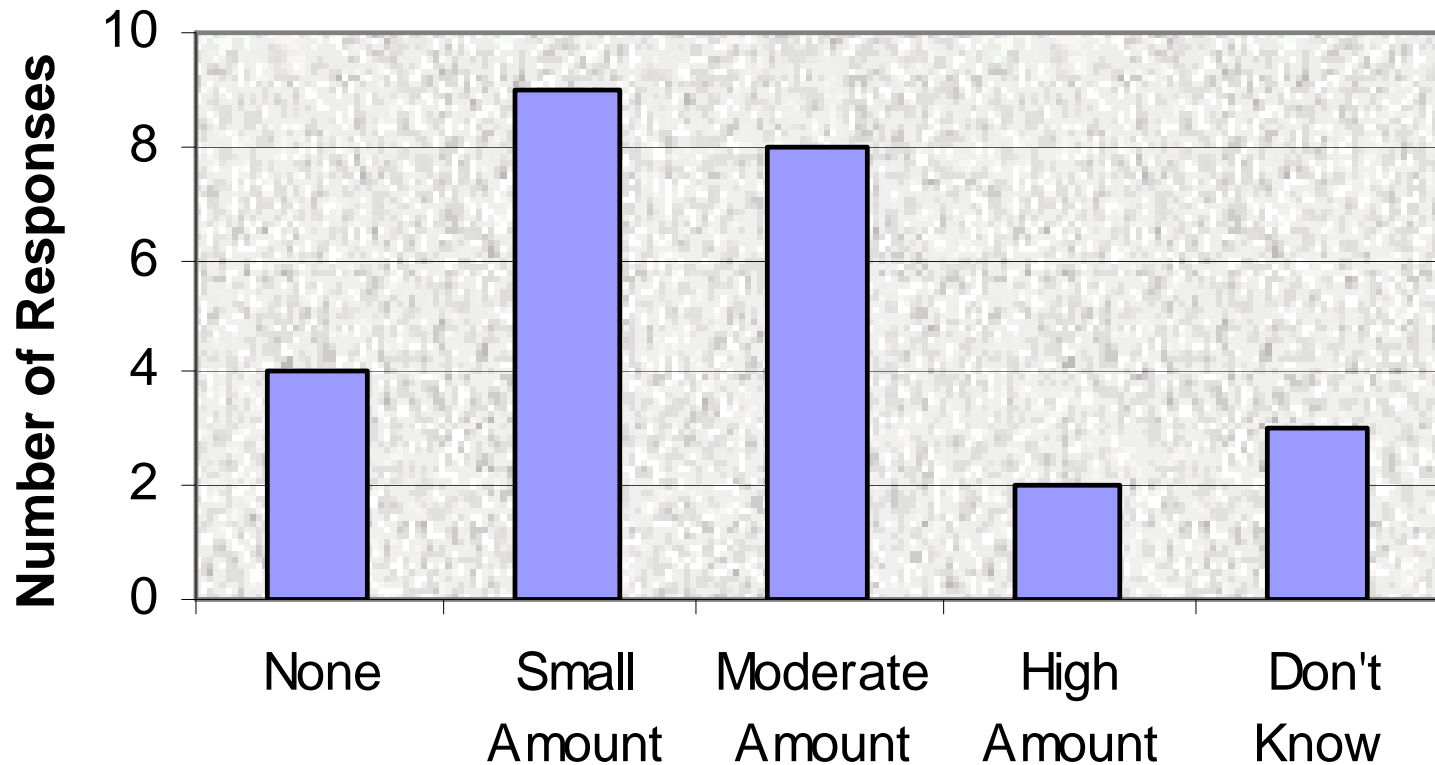
- a. Policy Issues
- b. Role of Public Health
- c. ELSI Resources

## Cancer Genetics in Professional Practice

- Role of Health Practitioners
- Role of Public Health Professionals
- Challenges and Barriers
- Cancer Genetic Resources
- Role of Michigan Cancer Genetics Alliance

# Overview of Needs Assessment June 2004

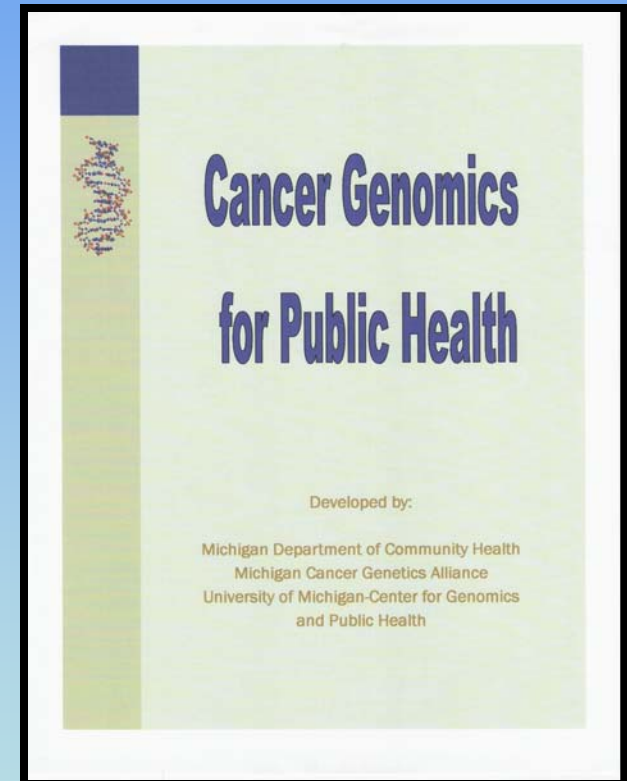
## How Much is Cancer Genetics Currently Being Integrated into Your Program?



# Cancer Genomics for Public Health

## Course Objectives

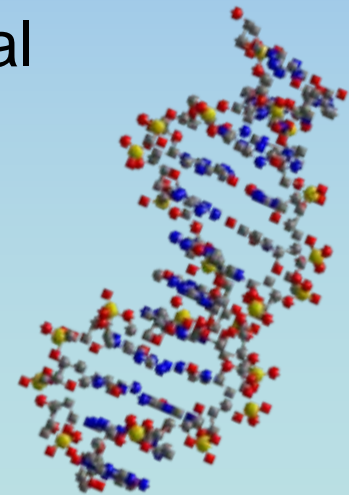
- **Increase genomic knowledge, interest and perception of relevance** among public health providers in cancer control
- **Facilitate integration of cancer genomics** into public health practice, programming, policy and services
- **Foster a collaborative process between public health and genomics experts**



# Cancer Genomics for Public Health

## (Continued)

- 6 sessions, 13 speakers
  - 11 hours of content and practical application exercises
  - Presented over a 6 week time period
  - Mandatory for all cancer section staff
  - Also attended by local public health, oncology nurse, family medicine physician and a prostate cancer survivor
- Focus on MDCH Cancer Priorities
    - Breast
    - Colon
    - Lung
    - Prostate
    - Cervical



# CaGPH (Continued)

- Application exercises
  - Genomics in the media
  - Pedigree exercises
  - What's happening in other states

# Modules

- 👉 Speakers came from hospitals and academic institutions throughout the state
- 👉 Attempted to teach public health concepts to the experts as well
- 👉 Terminology – ‘Cheat Sheet’, glossary and list of resources broken down by site specific cancer
- 👉 Last session – Discussed resources, ELSI vs. PHELSI, the future of cancer genomics and development of an action plan.



# Evaluation

*Evaluation prior to  
first module  
April, 2005*



*Evaluation after  
each session*



*Final Post Evaluation  
June, 2005*



*1 year follow up survey  
March, 2006*



*Focus Groups  
July 2005*

# Pre Evaluation

- Participants asked to rate on a scale of 1 to 10 their own:

Knowledge  
Confidence  
Relevance  
Interest



- ✓ Cancer biology and genetics
- ✓ Genomic approaches to cancer prevention and control
- ✓ ELSI issues related to cancer genetics
- ✓ Ways to integrate cancer genetics into professional practice

# Post Session Evaluation

- Basic session evaluation
- Asked to rate whether specific course objectives were met
- Asked specifically about ELSI overall objectives and to each specific cancer
- Identification of ways sessions could be applied to public health practice

# Focus Groups

- July 2005 – 1 month after last session
- 10 voluntary participants, 2 groups
- Given Is It In Your Genes? by Philip Reilly as an incentive to participate
- Each group had a different focus to discuss
  - First group - content, logistics, relevance and integration into job/work
  - Second group – applicability, barriers to application, and future dissemination

# Focus Group Comments

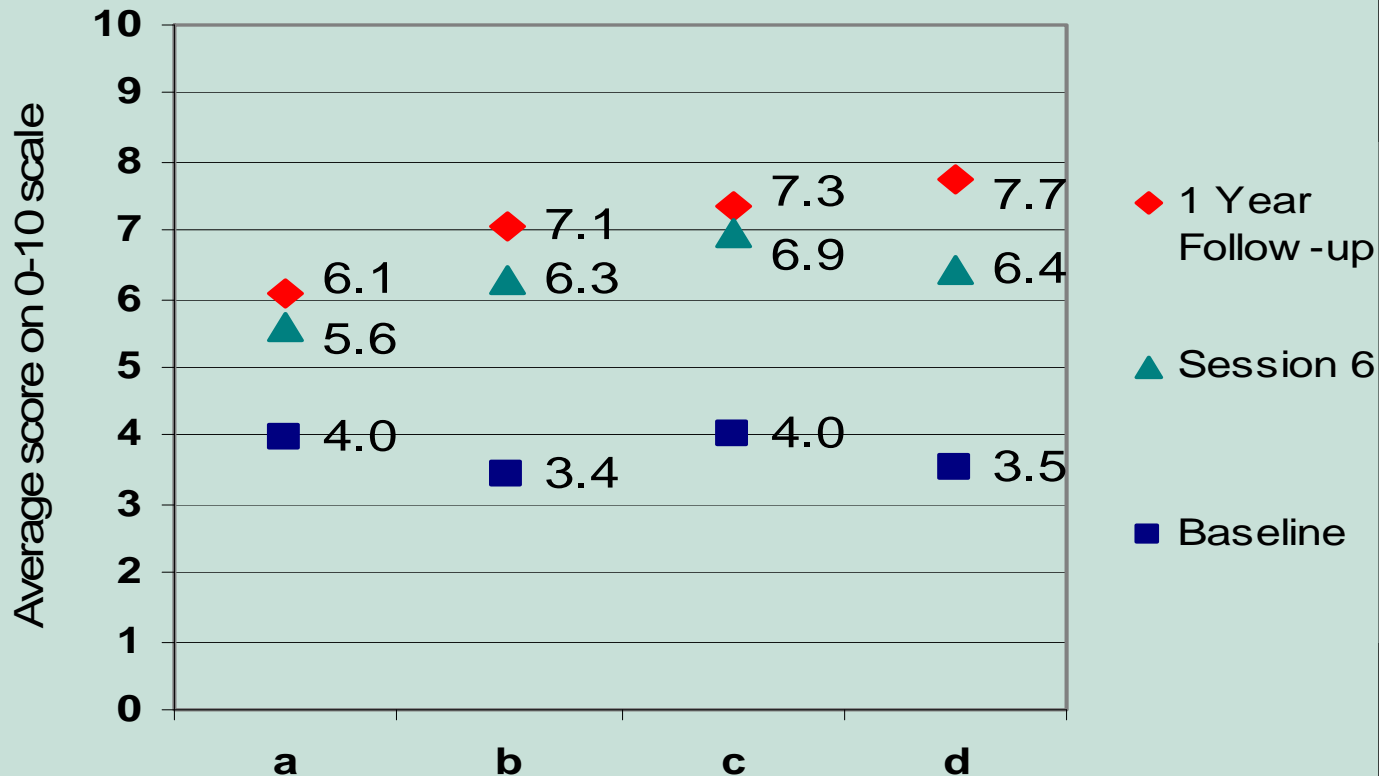


General format and content	Six sessions may be too many	Some liked repetition of material others did not – disagreement of overlap
Sessions by disease type	Meant to learn science, application or both?	How can they apply what they learned to their work now?
Enjoyed learning about pedigrees	More practical examples, applicability to current programs	Not enough applicability of knowledge

# One Year Follow-up

Average scores for *clinical* respondents

How knowledgeable do you feel about:



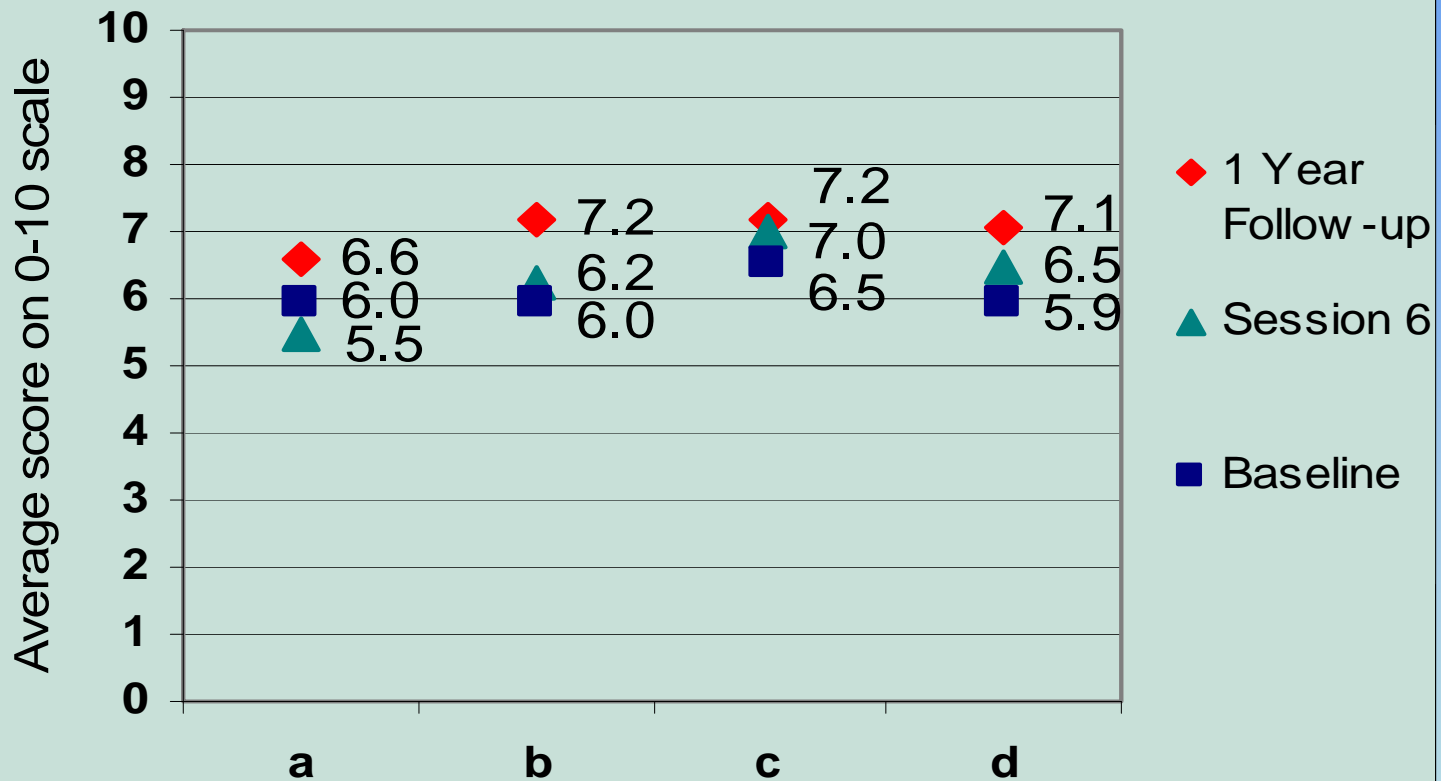
a : cancer biology and genetics

b : genomic approaches to cancer prevention and control

c : ethical, legal, and social implications related to cancer genetics

d : ways to integrate cancer genetics into your professional practice

Average scores for *clinical* respondents  
How relevant are the following areas to  
your position/area of work?



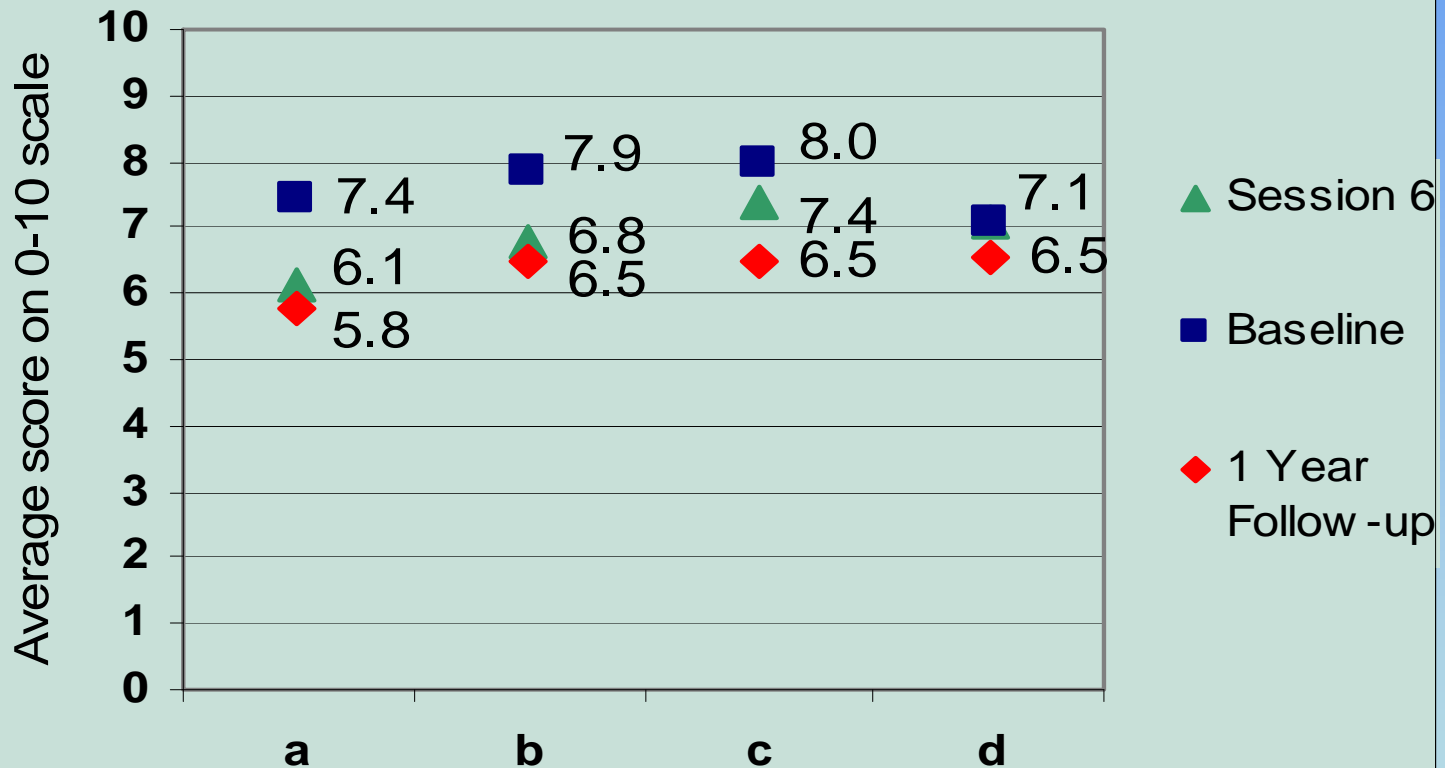
a : cancer biology and genetics

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d : ways to integrate cancer genetics into your professional practice

Average scores for *clinical* respondents  
How interested are you in learning more about:



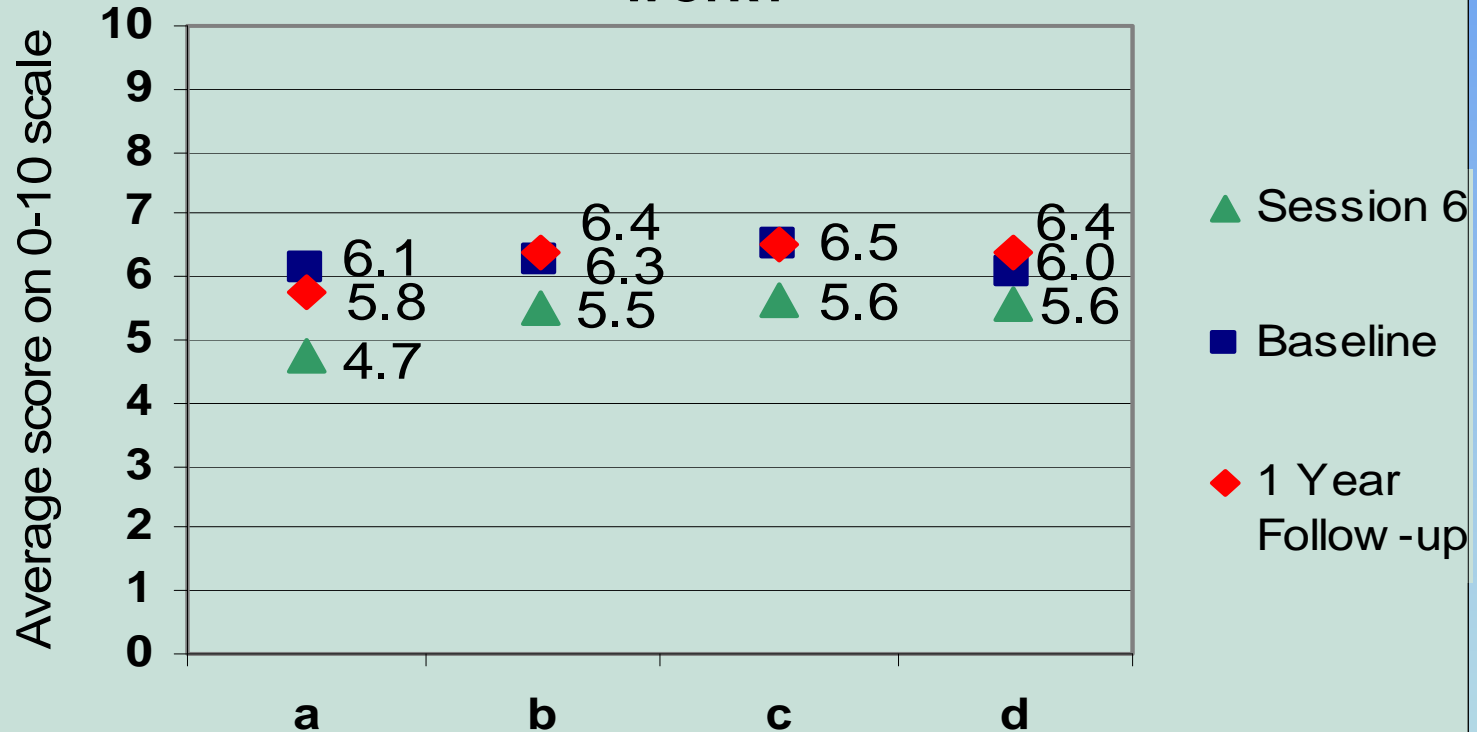
a : cancer biology and genetics

b : genomic approaches to cancer prevention and control

c : ethical, legal, and social implications related to cancer genetics

d : ways to integrate cancer genetics into your professional practice

Average scores for *clinical* respondents  
**How confident are you that you can apply information on the following areas to your work?**



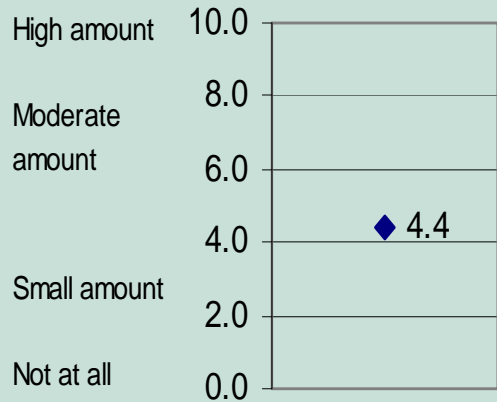
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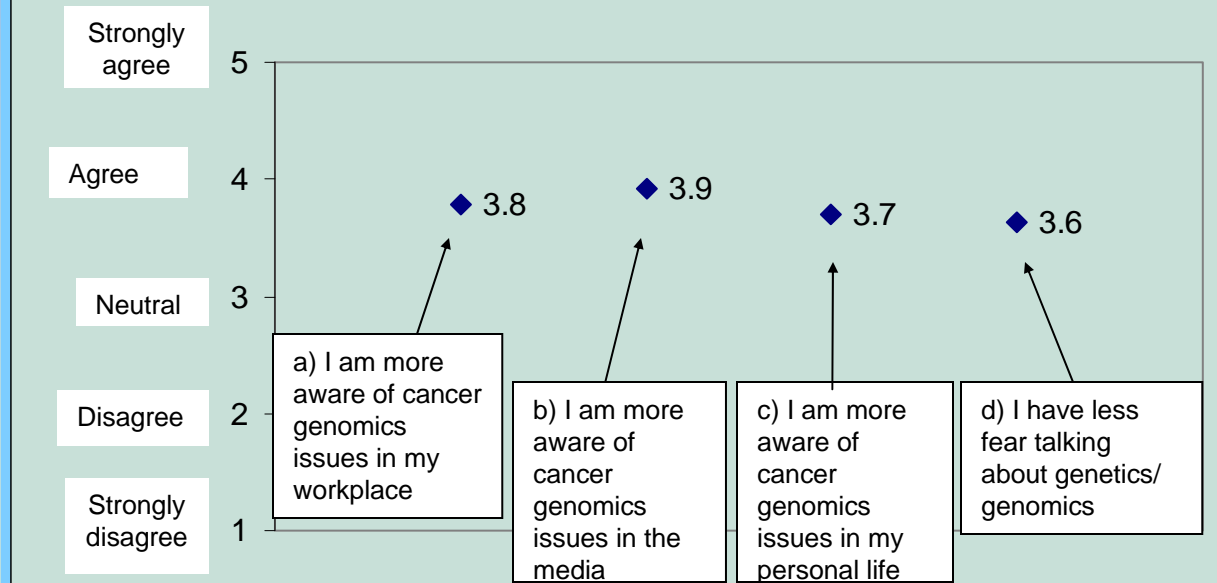
### Average score of respondents



**In your opinion, to what degree is cancer genetics currently being integrated into your work-related activities and program(s)?**

**As a result of my attending the CaGPH session(s):**

### Average scores of respondents



# Where does it go from here?



-by Bill Watterson

- Currently:
  - Working with contractor to ‘streamline’
    - Cutting down hours from 11 to approximately 2
    - Not so technical
    - Format for dissemination
    - Public health as target audience
    - More application

**Thank You!**  
**questions?**

